

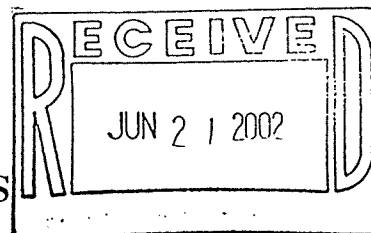
Jane Swift
Governor

Jennifer Davis Carey
Director of Consumer Affairs

David L. O'Connor
Commissioner

COMMONWEALTH OF MASSACHUSETTS
OFFICE OF CONSUMER AFFAIRS
AND BUSINESS REGULATION
DIVISION OF ENERGY RESOURCES
70 FRANKLIN STREET, 7TH FLOOR
BOSTON, MA 02110-1313

Internet: <http://www.state.ma.us/doer>
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(617) 727-0030
(617) 727-0093

James M. Malandrinos, President
Industrial Power Services Corporation
PO Box 840
Ware, MA 01082

RE: RPS Eligibility Decision
Granby LFG [LG-1006-2]

June 18, 2000

Dear Mr. Malandrinos,

On behalf of the Division of Energy Resources (the Division), I am pleased to inform you that Granby LFG's Application for Statement of Qualification pursuant to the Massachusetts Renewable Energy Portfolio Standard (RPS) Regulations, 22 CMR 14.00, is hereby approved. The Division finds that the Generation Unit meets the requirements for eligibility as a New Renewable Generation Unit pursuant to 225 CMR 14.05.

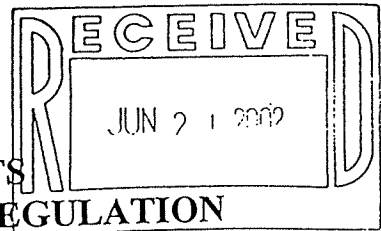
Each Massachusetts New Renewable Generation Unit is assigned a unique Massachusetts RPS Identification Number (MA RPS ID#). The MA RPS ID # stated on the Statement of Qualification must be included in all correspondence with the Division. Granby LFG's MA RPS ID# is: LG-1006-02.

The Division wishes to remind you of the notification requirements for changes in eligibility status contained in 225 CMR 14.06(3). The Owner or Operator of the Generation Unit shall submit notification of such changes to the Division no later than five days following the end of the month during which such changes were implemented.

Sincerely,

Robert Sydney
General Counsel

Encl.(1): Statement of Qualification



COMMONWEALTH OF MASSACHUSETTS
OFFICE OF CONSUMER AFFAIRS AND BUSINESS REGULATION
DIVISION OF ENERGY RESOURCES

Statement of Qualification

Pursuant to the Renewable Energy Portfolio Standard
225 CMR 14.00

This Statement of Qualification, provided by the Massachusetts Division of Energy Resources, signifies that the Generation Unit identified below meets the requirements for eligibility as a New Renewable Generation Unit, pursuant to the Renewable Energy Portfolio Standard 225 CMR 14.05, as of the approval date of the Application for Statement of Qualification, this 18th day of June 2002.

Authorized Representative's Name and Address:

James M. Malandrinos, President
Industrial Power Services Corp.
PO Box 840
Ware, MA 01082
Phone: 413.967.7415

Name of Generation Unit:

Granby LFG

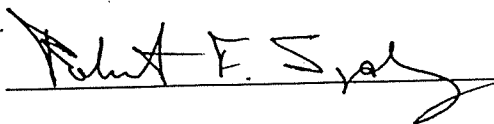
ISO-NE Generation Unit Asset Identification Number or NE-GIS Identification Number:

1-572

This New Renewable Generation Unit is assigned a unique Massachusetts RPS Identification Number. Please include this MA RPS ID # on all future correspondence with the Division.

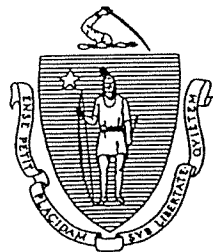
MA RPS ID #: LG-1006-02

Pursuant to 225 CMR 14.06, the Owner or Operator of the New Renewable Generation Unit is responsible for notifying the Division of any change in eligibility status, and the Division may suspend or revoke this Statement of Qualification if the Owner or Operator of a New Renewable Generation Unit fails to comply with 225 CMR 14.00.



Date: June 18, 2002

Robert F. Sydney
General Counsel
Division of Energy Resources



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE

ARGEO PAUL CELLUCCI
Governor

JANE SWIFT
Lieutenant Governor

BOB DURAND
Secretary

LAUREN A. LISS
Commissioner

DEC 8 2000

James Malandrinos, President
Industrial Power Services Corporation
P.O. Box 150, East Street Rear
Ware, MA 01082

Re: PVAPCD – Granby
Regulation 310 CMR 7.02
Application No. 1-B-00-027
Transmittal No. 105796
Granby Landfill Gas-to-Energy Facility

CONDITIONAL APPROVAL

Dear Mr. Malandrinos:

The Department of Environmental Protection, Bureau of Waste Prevention, Western Regional Office ("the Department") on August 2, 2000 received a Non-Major Comprehensive Plan Application ("NMCPA") from Industrial Power Services Corporation ("IPSC"). The NMCPA is submitted for the proposed installation and operation of four (4) engine/generators at the Granby Sanitary Landfill ("GSL") located on New Ludlow Road, Granby, MA. The GSL is operated by Holyoke Sanitary Landfill, Inc.; however, the engine/generators will be owned and operated by IPSC. The NMCPA was prepared by SCS Engineers and bears the seal and signature of Peter F. Kuniholm, Massachusetts Registered Professional Engineer No. 23046. An approved, stamped copy of the NMCPA will be forwarded.

INTRODUCTION

Landfill gas ("LFG") is currently collected by an existing system of extraction wells, lateral and header pipes, vacuum blowers, and ancillary equipment. The collected gas is consumed in an enclosed flare which was approved by the Department on May 13, 1997. IPSC is proposing to install and operate four new Caterpillar Internal Combustion Engines, each rated at 415 kW of output with heat input ratings of 5.05 MMBtu/hr. The units will be fired by the LFG only; there is no back up fuel. The engines are designed to destroy methane and non-methane organic compounds in the LFG. Each unit will consume about nine million cubic feet of LFG per month. The gross heating value of the LFG is approximately 500 Btu per cubic foot.

Each engine will be shipped and housed in a metal container. All four engines will be operated simultaneously and will produce electrical power for transfer to the grid. Each will be served by a new exhaust stack which will stand 18 feet above ground level, ten feet above the roof of the container, with an inside exit diameter of six inches. The flare will be maintained at the site for back up to the engines. It will not run when the engines are in operation.



Please be advised that all conditions, provisions and emission limits stated in the Department's Conditional Approval of the enclosed flare, dated May 13, 1997 and the Amended Conditional Approval, dated March 2, 2000 remain in effect when the LFG is diverted from the engines to the flare.

DESCRIPTION

Each unit is a spark-ignited, internal combustion engine, lean burn, turbo charged, and suitable for low-pressure LFG. Each engine will be housed in an eight-foot by 40-foot shipping container. Each container will include the engine-generator, radiator, after-cooler radiator, muffler and ancillary equipment. There will be two other containers at the site. One will be an eight-foot by 40-foot unit which will house the switch-gear and controls. The other will be a ten-foot by 50-foot container which will house a control room, office and room for storage. Also, each engine will be equipped with a silencer for sound attenuation located on the stack. A LFG pre-conditioning system will do the following:

- Remove moisture and dissolved contaminants from the LFG.
- Remove particulate matter that is entrained in the LFG.

BEST AVAILABLE CONTROL TECHNOLOGY

The BACT determination concerns options for controlling NOx and CO emissions from the engines. IPSC looked into several control options for NOx. IPSC has determined and the Department agrees that lean burn combustion with automatic A/F ratio control is BACT for control of NOx emissions. *See note below.*

IPSC looked at lean burn combustion and catalytic oxidation for control of CO. They discovered that no engine or catalyst vendors are willing to supply oxidation catalysts for combusting LFG. IPSC has determined and the Department agrees that lean burn combustion is BACT for control of CO emissions.

Note:

On August 31, 1996 the Department issued a policy (96.001) that is applicable to LFG-to-energy projects using internal combustion engines with NOx emissions less than 50 tons per year. For those projects with an output capacity of 1.7 megawatts or less, the NOx emission limit is 1.2 grams per brake horsepower-hour. The output capacity of the four engines is 1.66 megawatts and NOx emissions will be no more than 1.2 grams per brake horsepower-hour as guaranteed by the engine manufacturer.

EMISSION LIMITS

The following are the proposed emission limits for the operation of the four engine/generators:

TABLE 1

POLLUTANT	EMISSION LIMITS*		
	lbs./hr	Tons/month	Tons/year**
Nitrogen Oxides	6.0	2.2	26.3
Carbon Monoxide	12.0	4.4	52.5
Total Particulate	3.4	1.3	15.1
Sulfur Dioxide	0.84	0.31	3.7
NMOC	0.4***	0.14	1.67

*Total for all four engines

**Compliance based on a rolling twelve-month total

***Based on destruction efficiency of 98%

APPROVAL PROVISIONS

It is the opinion of the Department that the proposed gas-to-energy project is consistent with modern air pollution control technology and Best Available Control Technology. The Department hereby grants Conditional Approval for this project pursuant to Regulation 310 CMR 7.02(2)(a) of the "Regulations for the Control of Air Pollution in the Pioneer Valley Air Pollution Control District", as contained in 310 CMR 7.00, subject to the following provisions:

- ✓1. IPSC shall notify the Department when the engines are installed and ready for field inspection.
2. IPSC shall ensure that each engine reduce NMOC emissions by 98% by weight, or reduce stack NMOC emissions to 20 parts per million as hexane by volume, dry basis, at three percent oxygen, or less.
3. IPSC shall ensure that visible emissions from each engine not exceed 0% opacity (no visible emissions), with exception of up to five minutes during startup. During startup visible emissions shall comply with the provisions of 310 CMR 7.06.
4. IPSC shall perform emission compliance testing on the four engines within 90 days of startup to determine compliance with the emission limits listed in Table 1. The testing will include, at a minimum, NOx, CO, NMOC and SO2, particulate and opacity and shall be conducted in accordance with test methods and procedures contained on 40 CFR Part 60, Appendix A. A stack test protocol shall be submitted to the Department at least 30 days prior to testing. The final emission test report shall be submitted to the Department within 30 days from the completion of the field tests.
5. IPSC shall perform sound level emission tests at the facility property line to ensure that sound impacts from the operation of the four engines not exceed 10 dB (A) above background and not cause a puretone condition as defined in the Department's DAQC Policy No. 90-001. A test protocol shall be submitted to the Department at least 30 days prior to the tests. The tests shall be performed within 90 days of startup. The results of the tests shall be reported to the Department within 30 days of test completion.
6. IPSC shall ensure that emissions from the engines do not exceed the limits listed in **Table 1** above at any time.
7. IPSC shall take appropriate measures including shut down to abate any nuisance condition(s) generated by the operation of these engines.
8. IPSC shall notify the Department by telephone or fax within 24 hours of any upsets or malfunctions of the facility which results in excess emissions and/or a condition of air pollution.
9. IPSC shall record the volume of LFG fired in each engine for each month and for each twelve-month rolling period.
10. IPSC shall maintain all LFG usage, equipment malfunctions and emission data records on site for a period of five years from the time at which these records were generated. All records shall be maintained up-to-date such that the year-to-date information is readily available for Department examination.
11. IPSC shall provide Department personnel immediate access to the site for the purpose of making inspections, obtaining data and reviewing records during normal working hours.
12. IPSC shall construct and operate the new engines in strict accordance with the NMCPA approved herein. Should there be any differences between this Conditional Approval and the NMCPA, this Conditional Approval shall govern.
13. IPSC shall keep a copy of the Standard Operating and Maintenance Procedures for the engines on site at all times.
14. IPSC shall ensure that the four engines operate in compliance with all applicable air quality regulations.

This **Conditional Approval** pertains only to the air quality control aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other state, local, or federal laws and regulations.

The Department directs your attention to 40 CFR 60, Subpart WWW – "Standards of Performance for Municipal Solid Waste Landfills" and all requirements thereunder, for which the Department has not accepted delegation of authority. There are certain notification, record keeping and reporting, monitoring and testing requirements you may be subject to. Questions regarding this matter should be directed to U. S. EPA – New England, Region 1, One Congress Street, Suite 1100 (CAP), Boston, MA 02114.

The Department has determined that the filing of an Environmental Notification Form ("ENF") with the Secretary of Environmental Affairs, for air quality purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act, and Regulation 301 CMR 11.00, section 11.03, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or Environmental Impact Report at a later time.

This **Conditional Approval** is an action of the Department. There are limited rights of appeal. For a description of these rights, read the enclosure "APPEAL RIGHTS".

If you have any questions or comments regarding this **Conditional Approval**, please contact Robert Wineberg of the Western Regional Office at (413) 755-2234.

Very truly yours,



Craig Goff

Permit Chief
Bureau of Waste Prevention
Western Region

RJW/rjw

cc. David Howland, DRD, WERO
Yi Tian, DEP, One Winter Street, Boston, MA 01208
Robert Vachula, WERO



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

436 Dwight Street • Springfield, Massachusetts 01103 • (413) 784-1100

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

ELLEN ROY HERZFELDER
Secretary

LAUREN A. LISS
Commissioner

January 17, 2002

James Malandrinos, President
Industrial Power Services Corporation
P.O. Box 840, East Street Rear
Ware, MA 01082

Re: PVAPCD – Granby
Regulation 310 CMR 7.02(4)
Limited Plan Application
Application No. 1-B-02-031
Transmittal No. W031595
Granby Landfill Gas-to-Energy Facility
Revised (2) Table 1 (Emission Limits)

FINAL APPROVAL (AMENDED)

Dear Mr. Malandrinos:

The Department of Environmental Protection, Bureau of Waste Prevention, Western Regional Office ("the Department") approved on December 8, 2000 a landfill gas-to-energy facility consisting of four (4) engine/generators at the Granby Sanitary Landfill located on New Ludlow Road in Granby, Massachusetts. The engine/generators are owned and operated by Industrial Power Services Corporation of Ware, Massachusetts.

Compliance stack testing was performed on April 9 -12, 2002. As a result of these tests, Industrial Power Services Corporation proposes in this Limited Plan Application to revise upward the permit emission limitations for SO₂ and CO, and to restate the non-methane hydrocarbon (NMHC) emissions in the alternate units allowed in the permit.

Industrial Power Services Corporation proposes to increase the SO₂ limit to account for the elevated landfill gas sulfur content, since all the sulfur contained in the landfill gas is emitted after combustion in the engines, and any control equipment to clean up the landfill gas before combustion, or the clean the engine exhaust after combustion would be cost prohibitive in this application.

Industrial Power Services Corporation also proposes to allow an increased CO limit from these engines, since they were able to tune for low NO_x emissions by allowing the CO to increase slightly.

Emissions of NO_x and CO from these engines are governed by the Department's December 8, 2000 CONDITIONAL APPROVAL and with Department Policy COM-96.001 ("the Policy") relating to the permitting of landfill gas-to-energy projects. The Policy specifies that landfill gas-to-energy projects with a maximum total project capacity of 1.7 megawatts (MW) or less (such as this project) not emit NO_x at a rate greater than 1.20 g/bhp-hr, be subject to a NO_x/CO optimization/minimization program with a target emission rate of 0.90 grams NO_x per brake horsepower-hour (g/bhp-hr), and that CO be minimized.

The tested NO_x emission rate on these engines ranged from 0.54 to 0.68 g/bhp-hr which is substantially less than the 0.90 g/bhp-hr target emission rate specified in the Policy. The tested CO emissions were slightly higher than the permit limit (12.89 lb/hr vs. 12.0 lb/hr), which was the consequence of tuning the engines for low NO_x operation. In the Department's opinion, this is an acceptable trade-off for reduced NO_x emissions.

Lastly, Industrial Power Services Corporation proposes to change the NMHC limit from 0.4 lb/hr (which was based on 98% destruction efficiency of the engine) to 0.97 lb/hr, which is equivalent to 20 ppm as hexane, corrected to 3% O₂. Both methods of computing a mass emission rate for NMHC were allowed for in provision 2 of the original CONDITIONAL APPROVAL.

Therefore, the Department hereby reissues Table 1 (Emission Limits) to read as follows:

TABLE 1 (revision 2 – 1/20/2002)

POLLUTANT	EMISSION LIMITS *		
	lb/hr	Tons/month	tons/year **
Nitrogen Oxides	4.65 ***	1.73	20.37
Carbon Monoxide	12.89	4.80	56.45
Total Particulate	3.46	1.29	15.14
Sulfur Dioxide	3.97	1.48	17.40
NMOC	0.97 ****	0.36	4.24

* Total for all four engines

** Compliance based on a rolling twelve-month total

*** Equivalent to \approx 0.90 g NO_x/bhp-hr

**** Based on 20 ppm as hexane, corrected to 3% O₂.

Please be advised that all the other provisions of the original CONDITIONAL APPROVAL remain in full force except as specifically modified by this FINAL APPROVAL (AMENDED).


This **FINAL APPROVAL** pertains only to the **air quality control** aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other state, local, or federal laws and regulations.

The Department has determined that the filing of an Environmental Notification Form ("ENF") with the Secretary of Environmental Affairs, for air quality purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act, and Regulation 301 CMR 11.00, section 11.03, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or Environmental Impact Report at a later time.

This **FINAL APPROVAL (AMENDED)** is an action of the Department. There are limited rights of appeal. For a description of these rights, read the enclosure "**APPEAL RIGHTS**".

If you have any questions or comments regarding this **FINAL APPROVAL (AMENDED)**, please contact John Kirzec of the Western Regional Office at (413) 755-2225.

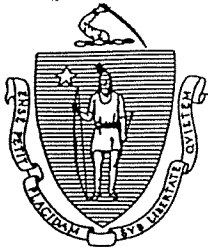
Very truly yours,


for Craig Goff
Permit Chief
Bureau of Waste Prevention
Western Region

JK/jk
granby landfill - mod (2) of CPA - lpa.doc

cc: Steve Ellis, WERO
Yi Tian, DEP, One Winter Street, Boston, MA 01208

Roberta Baker, WERO (electronic copy)



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor



ELLEN ROY HERZFELDER
Secretary

EDWARD P. KUNCE
Acting Commissioner

James Malandrinos, President
Industrial Power Services Corporation
P.O. Box 150, East Street Rear
Ware, MA 01082

April 30, 2003

Re: PVAPCD – Granby
Regulation 310 CMR 7.02
Application No. 1-P-03-006
Transmittal No. 024185
Granby Landfill Gas-to-Energy Facility

CONDITIONAL APPROVAL

Dear Mr. Malandrinos:

The Department of Environmental Protection, Bureau of Waste Prevention, Western Regional Office ("the Department") on February 10, 2003 received a Non-Major Comprehensive Plan Application ("NMCPA") from Industrial Power Services Corporation ("IPSC"). The NMCPA is submitted for the proposed installation and operation of three (3) engine/generators and a candlestick flare at the Granby Sanitary Landfill ("GSL") located on New Ludlow Road, Granby, MA. The GSL is operated by Holyoke Sanitary Landfill, Inc.; however, the engine/generators and flare will be owned and operated by IPSC. The NMCPA was prepared by SCS Engineers and bears the seal and signature of Peter F. Kuniholm, Massachusetts Registered Professional Engineer No. 23046.

INTRODUCTION

Landfill gas ("LFG") is currently collected by an existing system of extraction wells, lateral and header pipes, vacuum blowers, and ancillary equipment. The collected gas is consumed by four existing engines approved by the Department on December 8, 2000 and an enclosed flare which was approved by the Department on May 13, 1997. IPSC is proposing to install and operate three new Caterpillar Internal Combustion Engines, each rated at 415 kW of output with heat input ratings of 5.05 MMBtu/hr and a candlestick flare rated at 300 standard cubic feet per minute (scfm). The units will be fired by the LFG only; there is no back up fuel. The engines and flare are designed to destroy methane and non-methane organic compounds in the LFG. Each engine will consume about nine million cubic feet of LFG per month. The gross heating value of the LFG is approximately 500 Btu per cubic foot.

Each engine will be housed in a metal container, with up to two engines in each container. All three engines, along with the existing four engines, can be operated simultaneously if sufficient gas is present and will produce electrical power for transfer to the grid. Each will be served by a new exhaust stack which will stand 18 feet above ground level, ten feet above the roof of the container, with an inside exit diameter of eight inches. The existing enclosed flare and the candlestick flare will be maintained at the site for back up to the engines. The candlestick flare will be utilized when less than 300 scfm is available to the flares for consumption. Below 300 scfm, the enclosed flare does not have sufficient energy input to operate properly, therefore the candlestick flare will be utilized. Above 300 scfm of LFG to the flares will place the enclosed flare in operation and shut down the candlestick flare.

This information is available in alternate format by calling our ADA Coordinator at (617) 574-6872.

436 Dwight Street • Springfield, Massachusetts 01103 • FAX (413) 784-1149 • TDD (413) 746-6620 • Telephone (413) 784-1100

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APPROVAL PROVISIONS

It is the opinion of the Department that the proposed gas-to-energy project is consistent with modern air pollution control technology and Best Available Control Technology. The Department hereby grants Conditional Approval for this project pursuant to Regulation 310 CMR 7.02 subject to the following provisions:

1. IPSC shall notify the Department in writing when the engines and flare have been installed and ready for operation.
2. IPSC shall ensure that each engine and flare reduce NMOC emissions by 98% by weight, or reduce stack NMOC emissions to 20 parts per million as hexane by volume, dry basis, at three percent oxygen, or less.
3. IPSC shall ensure that the engines and flare comply with their respective emission limits listed in Table 1 and Table 2 above.
4. IPSC shall ensure that visible emissions from each engine and flare not exceed 0% opacity (no visible emissions), with exception of up to five minutes during startup. During startup visible emissions shall comply with the provisions of 310 CMR 7.06.
5. IPSC shall apply modern air pollution control technology with respect to noise. In no case shall the operation of the IPSC facility result in an exceedance of the Department's noise guidelines of:
 - a. an increase in the broadband sound level by more than 10 dB(A) above ambient ; or
 - b. production of a "puretone".

These guidelines are contained in DAQC Policy 90-001. In addition, in no case shall the operation of the IPSC facility result in a condition of "Noise" as required by Regulation 310 CMR 7.10.

6. IPSC shall employ a NOx/CO optimization/minimization program on each engine within 180 days after startup. IPSC shall submit to the Department a report detailing the results of this program no later than 30 days following completion.
7. IPSC shall monitor the LFG Facility for the fuel flow in scfm and total standard cubic feet to all engines and flare combined.
8. IPSC shall establish and maintain a record keeping system on site for the following:
 - a. A record of routine maintenance activities performed on each engine including a description of the maintenance performed and the date the work was completed;
 - b. A record of all malfunctions for each engine including the date and time of the malfunction, the type of malfunction and the date and time corrective actions were completed; and
 - c. All records shall be kept on site for a period of five years and be made available to Department personnel upon request.
9. IPSC shall take immediate steps, including shutdown of the engines, to abate any nuisance condition generated by the operation of the engines.
10. The open flare shall be operated only on a supplemental basis to the landfill gas to energy facility and the enclosed flare and not as the primary landfill gas control system.

DESCRIPTION

Each unit is a spark-ignited, internal combustion engine, lean burn, turbo charged, and suitable for low-pressure LFG. Each engine will be housed in an eight-foot by 40-foot shipping container. Each container will include the engine-generator, radiator, after-cooler radiator, muffler and ancillary equipment. There will be two other containers at the site. One will be an eight-foot by 40-foot unit which will house the switch-gear and controls. The other will be a ten-foot by 50-foot container which will house a control room, office and room for storage. Also, each engine will be equipped with a silencer for sound attenuation located on the stack. A LFG pre-conditioning system will do the following:

- Remove moisture and dissolved contaminants from the LFG.
- Remove particulate matter that is entrained in the LFG.

BEST AVAILABLE CONTROL TECHNOLOGY

The BACT determination concerns options for controlling NOx and CO emissions from the engines. IPSC looked into several control options for NOx. IPSC has determined and the Department agrees that lean burn combustion with automatic A/F ratio control is BACT for control of NOx emissions. *See note below.*

IPSC looked at lean burn combustion and catalytic oxidation for control of CO. They discovered that no engine or catalyst vendors are willing to supply oxidation catalysts for combusting LFG. IPSC has determined and the Department agrees that lean burn combustion is BACT for control of CO emissions.

Note:

On August 31, 1996 the Department issued a policy (96.001) that is applicable to LFG-to-energy projects using internal combustion engines with NOx emissions less than 50 tons per year. For those projects with an output capacity of 1.7 megawatts or more, the NOx emission limit is 0.6 grams per brake horsepower-hour. The output capacity of the seven engines is 2.9 megawatts and NOx emissions will be no more than 0.6 grams per brake horsepower-hour as guaranteed by the engine manufacturer.

EMISSION LIMITS

The following are the proposed emission limits for the operation of the three engine/generators:

TABLE 1			
POLLUTANT	EMISSION LIMITS*		
		lbs./hr	Tons/year**
Nitrogen Oxides	0.6 g/bhp-hr	0.77	3.39
Carbon Monoxide	2.5 g/bhp-hr	3.22	14.11
Total Particulate	48 lb/MM dscf CH ₄	0.86	3.78
Sulfur Dioxide	500 ppm	0.99	4.35
NMOC	15 ppm	0.24***	1.06

*Limit for each engine

**Compliance based on a rolling twelve-month total

***Based on emission rate of 20 ppm NMOC (equivalent to 20 ppmv as hexane at 3% O₂).

The open flare shall not exceed the following emission limits:

TABLE 2		
POLLUTANT	Emissions limits	
	lbs/MMBtu	tons/yr
Nitrogen oxides (NO _x)	0.06	2.37
Carbon monoxide (CO)	0.15	5.91
Non-methane organic compounds (NMOC)	-	7.31
Sulfur dioxide (SO ₂)	-	6.52

Note: ton/year means tons per consecutive 12 month period.

IPSC shall not exceed 99 tons per consecutive 12 month period of CO from all seven generators and the candlestick flare combined.

EMISSIONS TESTING

11. IPSC shall construct the engines to accommodate the emission testing requirements contained in 40 CFR Part 60 Appendix A.
12. IPSC shall conduct compliance emission testing in accordance with the methods and procedures contained in 310 CMR 7.13, 40 CFR Part 60 Subpart WWW Section 60.754, and 40 CFR 60 Appendix A.
13. IPSC shall submit a stack test protocol to the Department at least 30 days prior to commencing compliance testing.
14. IPSC shall conduct emission testing on each engine to determine compliance with, at a minimum, the emission limits contained in Table 1 herein no later than 180 days after initial startup.
15. IPSC shall submit the test report for any emissions testing to the Department within 45 days of completion of the emissions testing.

NOISE TESTING PROVISIONS

16. Within 60 days after start up of the new units, IPSC shall submit, for Department review and written approval, a test protocol for documenting noise levels with the LFG facility in operation. Unless otherwise specified by the Department, the test protocol shall (minimally) meet the following criteria:
 - a. Sound Compliance Measurements shall be for the A-weighted L_{90} , and octave band sound pressure levels shall be measured over at least a 15-minute time period at each location under similar or identical conditions (meteorological conditions and background noise conditions). More than one 15-minute time period may be required by the Department;
 - b. Sound Compliance Measurements shall be taken during periods when the facility is in operation. When feasible, Sound Compliance Measurements shall be conducted at times when the influence of extraneous background sounds is minimal;
 - c. Sound Compliance Measurements shall be made as close as possible to any nearby receptors; and

Sound measurements shall be conducted by a qualified noise specialist using noise monitoring equipment complying with the requirements of ANSI S1.4.

Standard Provisions

17. IPSC shall notify the Department by telephone or fax within 24 hours of any upsets or malfunctions of the facility which results in excess emissions and/or a condition of air pollution.
18. IPSC shall submit Final Standard Operating and Maintenance Procedures for the engines within 45 days of completion of the stack testing referenced in Provisions No. 11 -15 above.
19. IPSC shall provide Department personnel immediate access to the site, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
20. IPSC is notified that this Conditional Approval may be suspended, modified, or revoked by the Department if, at any time, the Department determines that any condition, provision or part of this Conditional Approval is being violated.
21. IPSC must notify the Department's Compliance/Enforcement Chief for the Bureau of Waste Prevention by telephone or fax, within 24 hours, and with written notification within 10 days, after the occurrence of any upsets or malfunctions of the engines or any appurtenant equipment which result in excess emission to the ambient air and/or a condition of air pollution.

22. IPSC shall operate the engines and the flare in compliance with all applicable air quality control regulations at all times. IPSC shall maintain all LFG usage, equipment malfunctions and emission data records on site for a period of five years from the time at which these records were generated. All records shall be maintained up-to-date such that the year-to-date information is readily available for Department examination.
23. IPSC shall keep a copy of the Standard Operating and Maintenance Procedures for the engines on site at all times.

This **Conditional Approval** pertains only to the **air quality control** aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other state, local, or federal laws and regulations.

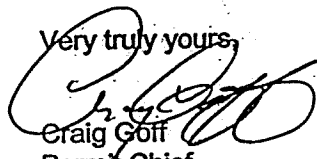
The Department directs your attention to 40 CFR 60, Subpart WWW – "Standards of Performance for Municipal Solid Waste Landfills" and all requirements thereunder, for which the Department has not accepted delegation of authority. There are certain notification, record keeping and reporting, monitoring and testing requirements you may be subject to. Questions regarding this matter should be directed to U. S. EPA – New England, Region 1, One Congress Street, Suite 1100 (CAP), Boston, MA 02114.

The Department has determined that the filing of an Environmental Notification Form ("ENF") with the Secretary of Environmental Affairs, for air quality purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act, and Regulation 301 CMR 11.00, section 11.03, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or Environmental Impact Report at a later time.

This **Conditional Approval** is an action of the Department. There are limited rights of appeal. For a description of these rights, read the enclosure "APPEAL RIGHTS".

If you have any questions or comments regarding this **Conditional Approval**, please contact Marc Simpson of the Western Regional Office at (413) 755-2115.

Very truly yours,



Craig Goff
Permit Chief
Bureau of Waste Prevention
Western Region

cc. Yi Tian, DEP, Boston
Roberta Baker, Peter Czapienski, WERO



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
WESTERN REGIONAL OFFICE

436 Dwight Street • Springfield, Massachusetts 01103 • (413) 784-1100 • FAX (413) 784-1149

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

STEPHEN R. PRITCHARD
Secretary

ROBERT W. GOLLEDGE, Jr.
Commissioner

June 23, 2006

RECEIVED
JUN 27 2006

BY:

James Malandrinos, President
Industrial Power Services Corporation
P.O. Box 150, 60 East Street River
Ware, MA 01082

Re: PVAPCD – Granby
Regulation 310 CMR 7.02
Application No. 1-P-06-020
Transmittal No. W069863
Granby Landfill Gas-to-Energy Facility

CONDITIONAL APPROVAL

Dear Mr. Malandrinos:

The Department of Environmental Protection ("MassDep"), Bureau of Waste Prevention, has completed its review of the referenced application for the proposed installation and operation of an engine/generator at the Granby Sanitary Landfill ("GSL") located on New Ludlow Road, Granby, MA. The application, a Non-major Comprehensive Plan Application (NMCPA), was submitted on March 27, 2006. This engine/generator will be the eighth one to be installed at the site along with a candlestick flare. The GSL is operated by Holyoke Sanitary Landfill, Inc.; however, the engine/generators and flare will be owned and operated by Industrial Power Services Corporation (IPSC). The NMCPA was prepared by SCS Engineers and bears the seal and signature of Peter F. Kuniholm, Massachusetts Registered Professional Engineer No. 23046.

INTRODUCTION

Landfill gas ("LFG") is currently collected by an existing system of extraction wells, lateral and header pipes, vacuum blowers, and ancillary equipment. The collected gas is consumed by four existing engines approved by the Department on December 8, 2000, three existing engines and a candlestick flare approved by the Department on April 30, 2003 and an enclosed flare which was approved by the Department on May 13, 1997. IPSC is proposing to install and operate one new Caterpillar Internal Combustion Engines, rated at 415 kW of output with heat input ratings of 5.05 MMBtu/hr. The unit will be fired by the LFG only; there is no back up fuel.

This information is available in alternate format. Call Donald M. Gomes, ADA Coordinator at 617-556-1057. TDD Service - 1-800-298-2207.

MassDEP on the World Wide Web: <http://www.state.ma.us/dep>



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The engines and flare are designed to destroy methane and non-methane organic compounds in the LFG. The engine will consume about nine million cubic feet of LFG per month. The gross heating value of the LFG is approximately 500 Btu per cubic foot.

All eight engines can be operated simultaneously if sufficient gas is present and will produce electrical power for transfer to the grid. The proposed engine will be served by a new exhaust stack which will stand 18 feet above ground level, ten feet above the roof of the container, with an inside exit diameter of eight inches. The existing enclosed flare and the candlestick flare will be maintained at the site for back up to the engines. The candlestick flare will be utilized when less than 300 scfm is available to the flares for consumption. Below 300 scfm, the enclosed flare does not have sufficient energy input to operate properly, therefore the candlestick flare will be utilized. Above 300 scfm of LFG to the flares will place the enclosed flare in operation and shut down the candlestick flare.

DESCRIPTION

The engine is a spark-ignited, internal combustion engine, lean burn, turbo charged, and suitable for low-pressure LFG. The engine will be housed in one of the four eight-foot by 40-foot shipping containers which are capable of housing two generators in each. Each container will include the engine-generator, radiator, after-cooler radiator, muffler and ancillary equipment. There will be two other containers at the site. One will be an eight-foot by 40-foot unit which will house the switch-gear and controls. The other will be a ten-foot by 50-foot container which will house a control room, office and room for storage. Also, each engine will be equipped with a silencer for sound attenuation located on the stack. A LFG pre-conditioning system will do the following:

- Remove moisture and dissolved contaminants from the LFG.
- Remove particulate matter that is entrained in the LFG.

BEST AVAILABLE CONTROL TECHNOLOGY

The BACT determination concerns options for controlling NO_x and CO emissions from the engines. IPSC looked into several control options for NO_x. IPSC has determined and the Department agrees that lean burn combustion with automatic Air/Fuel ratio control is BACT for control of NO_x emissions. *See note below.*

IPSC looked at lean burn combustion and catalytic oxidation for control of CO. They discovered that no engine or catalyst vendors are willing to supply oxidation catalysts for combusting LFG. IPSC has determined and the Department agrees that lean burn combustion is BACT for control of CO emissions.

Note:

On August 31, 1996 the Department issued a policy (96.001) that is applicable to LFG-to-energy projects using internal combustion engines with NO_x emissions less than 50 tons per year. For those projects with an output capacity of 1.7 megawatts or more, the NO_x emission limit is 0.6 grams per brake horsepower-hour. The output capacity of the eight engines is 3.3 megawatts and NO_x emissions will be no more than 0.6 grams per brake horsepower-hour as guaranteed by the engine manufacturer.

EMISSION LIMITS

The following are the proposed emission limits for the operation of the proposed engine/generator:

TABLE 1			
POLLUTANT	EMISSION LIMITS*		
		lbs./hr	Tons/year**
Nitrogen Oxides	0.6 g/bhp-hr	0.77	3.39
Carbon Monoxide	2.5 g/bhp-hr	3.22	14.11
Total Particulate	48 lb/MM dscf CH ₄	0.86	3.78
Sulfur Dioxide	500 ppm	0.99	4.35
NMOC	15 ppm	0.24***	1.06

*Limit for each engine

**Compliance based on a rolling twelve-month total

***Based on emission rate of 20 ppm NMOC (equivalent to 20 ppmv as hexane at 3% O₂).

APPROVAL PROVISIONS

It is the opinion of the Department that the proposed gas-to-energy project is consistent with modern air pollution control technology and Best Available Control Technology. The Department hereby grants Conditional Approval for this project pursuant to Regulation 310 CMR 7.02 subject to the following provisions:

1. IPSC shall notify the Department in writing when the engines and flare have been installed and ready for operation.
2. IPSC shall ensure that each engine and flare reduce NMOC emissions by 98% by weight, or reduce stack NMOC emissions to 20 parts per million as hexane by volume, dry basis, at three percent oxygen, or less.
3. IPSC shall ensure that the proposed engine complies with the emission limits listed in Table 1 above.
4. IPSC shall ensure that visible emissions from the engine do not exceed 0% opacity (no visible emissions), with exception of up to five minutes during startup. During startup visible emissions shall comply with the provisions of 310 CMR 7.06.
5. IPSC shall apply modern air pollution control technology with respect to noise. In no case shall the operation of the IPSC facility result in an exceedance of the Department's noise guidelines of:
 - a. an increase in the broadband sound level by more than 10 dB(A) above ambient ; or
 - b. production of a "puretone".

These guidelines are contained in DAQC Policy 90-001. In addition, in no case shall the operation of the IPSC facility result in a condition of "Noise" as required by Regulation 310 CMR 7.10.

6. IPSC shall employ a NOx/CO optimization/minimization program on the engine within 180 days after startup. IPSC shall submit to the Department a report detailing the results of this program no later than 30 days following completion.
7. IPSC shall monitor the LFG Facility for the fuel flow in scfm and total standard cubic feet to all engines and flare combined.
8. IPSC shall establish and maintain a record keeping system on site for the following:
 - a. A record of routine maintenance activities performed on the engine including a description of the maintenance performed and the date the work was completed;
 - b. A record of all malfunctions for the engine including the date and time of the malfunction, the type of malfunction and the date and time corrective actions were completed; and
 - c. All records shall be kept on site for a period of five years and be made available to Department personnel upon request.
9. IPSC shall take immediate steps, including shutdown of the engine, to abate any nuisance condition generated by the operation of the engine.

EMISSIONS TESTING

10. IPSC shall construct the engine to accommodate the emission testing requirements contained in 40 CFR Part 60 Appendix A.
11. IPSC shall conduct compliance emission testing in accordance with the methods and procedures contained in 310 CMR 7.13, 40 CFR Part 60 Subpart WWW Section 60.754, and 40 CFR 60 Appendix A.
12. IPSC shall submit a stack test protocol to the Department at least 30 days prior to commencing compliance testing.
13. IPSC shall conduct emission testing on the engine to determine compliance with, at a minimum, the emission limits contained in Table 1 herein no later than 180 days after initial startup.
14. IPSC shall submit the test report for any emissions testing to the Department within 45 days of completion of the emissions testing.

NOISE TESTING PROVISIONS

15. Within 60 days after start up of the new units, IPSC shall submit, for Department review and written approval, a test protocol for documenting noise levels with the LFG facility in operation. Unless otherwise specified by the Department, the test protocol shall (minimally) meet the following criteria:

- a. Sound Compliance Measurements shall be for the A-weighted L_{90} , and octave band sound pressure levels shall be measured over at least a 15-minute time period at each location under similar or identical conditions (meteorological conditions and background noise conditions). More than one 15-minute time period may be required by the Department;
- b. Sound Compliance Measurements shall be taken during periods when the facility is in operation. When feasible, Sound Compliance Measurements shall be conducted at times when the influence of extraneous background sounds is minimal;
- c. Sound Compliance Measurements shall be made as close as possible to any nearby receptors; and

Sound measurements shall be conducted by a qualified noise specialist using noise monitoring equipment complying with the requirements of ANSI S1.4.

STANDARD PROVISIONS

16. IPSC shall notify the Department by telephone or fax within 24 hours of any upsets or malfunctions of the facility which results in excess emissions and/or a condition of air pollution.
17. IPSC shall submit Final Standard Operating and Maintenance Procedures for the engine within 45 days of completion of the stack testing referenced in Provisions No. 10 -14 above.
18. IPSC shall provide Department personnel immediate access to the site, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.
19. IPSC is notified that this Conditional Approval may be suspended, modified, or revoked by the Department if, at any time, the Department determines that any condition, provision or part of this Conditional Approval is being violated.
20. IPSC must notify the Department's Compliance/Enforcement Chief for the Bureau of Waste Prevention by telephone or fax, within 24 hours, and with written notification within 10 days, after the occurrence of any upsets or malfunctions of the engines or any appurtenant equipment which result in excess emission to the ambient air and/or a condition of air pollution.
21. IPSC shall operate the engines and the flare in compliance with all applicable air quality control regulations at all times. IPSC shall maintain all LFG usage, equipment malfunctions and emission data records on site for a period of five years from the time at which these records were generated. All records shall be maintained up-to-date such that the year-to-date information is readily available for Department examination.
22. IPSC shall keep a copy of the Standard Operating and Maintenance Procedures for the engines on site at all times.

The IPSC LFG facility, following the installation and operation of the proposed equipment in this Approval, will be a major source of CO (≥ 100 tons per year) emissions. Be advised that pursuant to Regulation 310 CMR 7.00 Appendix C(4)(a)6, you are required to submit an operating permit application no later than one (1) year after commencement of operation of the portion of the facility which made the facility subject to Appendix C, which in this case is the eighth engine at the facility.

This approval pertains only to the air quality control aspect of the proposal and does not negate the responsibility of the owners or operators to comply with other applicable state, local, or federal laws and regulations.

The Department has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Environmental Affairs, for air quality control purposes, was not required prior to this action by the Department. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and Regulation 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions" which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report at a later time.

This Approval is an action of the Department. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date you received this plan approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts which are the grounds for the request, and the relief sought. Additionally, the request must state why the plan approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, Massachusetts 02211

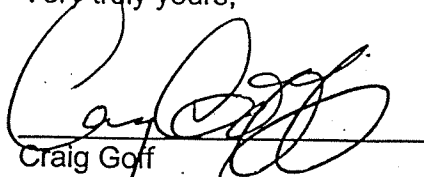
The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below.

The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

The Department may waive the adjudicatory hearing filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

If you have any questions or comments regarding this Approval, please contact Marc Simpson at (413) 755-2115.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Craig Goff', is written over a horizontal line.

Craig Goff
Permit Chief
Bureau of Waste Prevention
Western Region

cc. Yi Tian, DEP, Boston
Roberta Baker, Peter Czapienski, WERO